



Model
F3ZN-S□□□□P09-□□

AREA SCANNER

When using F3ZN-S series as an area scanner,a controller(F3ZP)is required. You can also use F3ZN-S series as an area sensor without a controller.

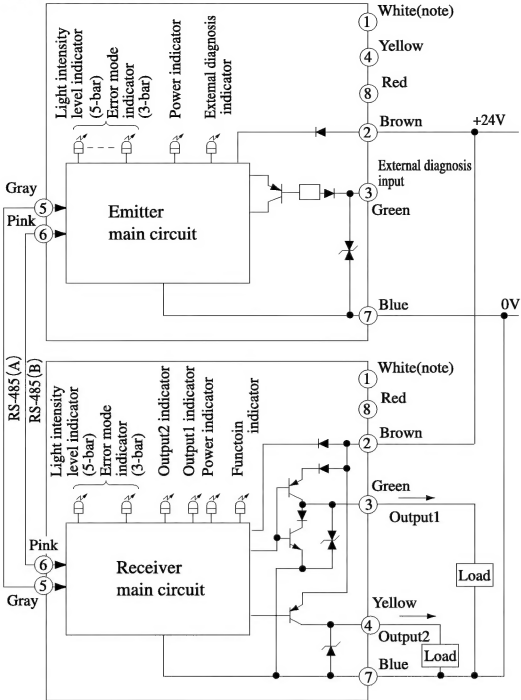
INSTRUCTION SHEET

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The NETHERLANDS

(Note)
Connection with a setting console(F39-MC11) is possible for F3ZN-S series.However, when you use setting console before December 2001,the formal display in the screen is not F3ZN series.But it can be used satisfactory.
Moreover, combined use connection of a setting console and a erea scanner controller cannot be performed.

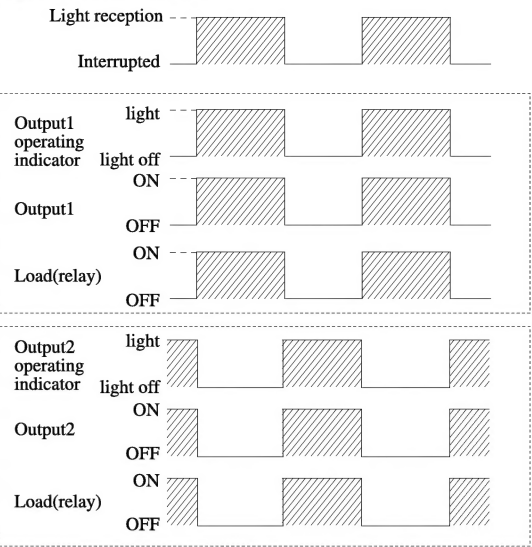
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I/O CIRCUIT



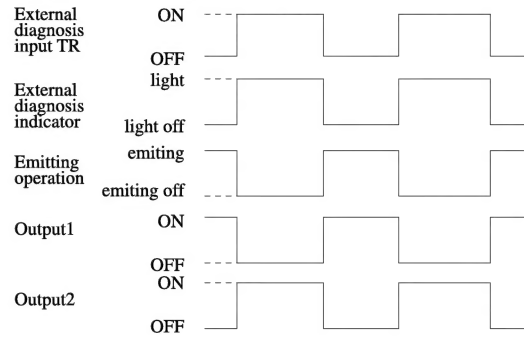
Note: Be sure to use it in Open mode.

TIMING CHART



EXTERNAL DIAGNOSIS FUNCTION

- It is the function to stop emitting when the external diagnostic input is connected to +24V.
- The timing chart of the external diagnosis function. (in case of stable light reception)



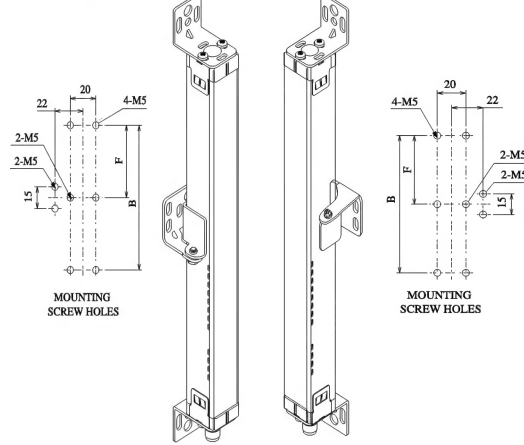
Series connection

Sensors can be connected in series using the types supplied with the connector for the series connection. Both the stand-alone type and the series connection type can be used for the sensors at the top end. (The F3ZN-SxxxxP09 series can connect with the F3ZN-SxxxxP09 series only.)

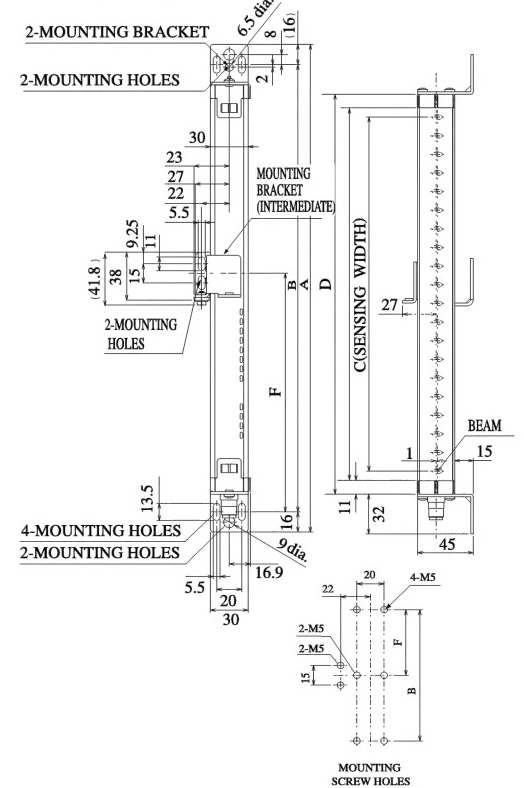
- No. of series connected light curtains : Up to 3 sets
- No. of beams : Up to 240 beams
- Length of the series connection cable : 3m max.

DIMENSIONS (The case of F3ZN-SxxxxP09)

Rear Mounting



Side Mounting



Dimensions for each type are calculated by following formulas.
F3ZN-MxxxxP09 : xxxx = 0180 to 1116 = C(Sensing width)
A = C + 95
B = C + 63
D = C + 31
F = Refer to the following table

Type that the intermediate mounting bracket and the mounting

F3ZN-SxxxxP09	The number of intermediate mounting brackets	Dimension F (note)
0612 to 1116	1	F=B/2

note:When not using value F obtained by the above-mentioned calculation, it gives as F= 670mm or less.

INDICATORS

Emitter	Receiver
① ~ ⑤ Light intensity level indicator (green) ① :200%and above of ON threshold level ② :150 to 200% of ON threshold level ③ :100 to 150% of ON threshold level ④ :75 to 100% of ON threshold level ⑤ :50 to 75% of ON threshold level	⑥ ~ ⑧ Error mode indicator (red) (refer to an attached Error Code Label)
⑨ —	⑨ Output2 operating indicator (orange)
⑩ —	⑩ Output1 operating indicator (orange)
⑪ Power indicator (green) ⑫ External diagnosis indicator (orange)	⑪ Power indicator (green) ⑫ Function indicator (green)

Place the sensor in the state where all light intensity level indicator are ON.

PROPER USE

Connections

- In case of F3ZN is switched on with the following mis-wiring states, notice that the F3ZN will not function properly WITHOUT error indication.
a. RS-485(A) and / or RS-485(B) is / are not connected between sensor emitter and sensor receiver, or
b. Control output2 is directly connected to +24V line or shield line.
- Lay the area sensor cable in an independent conduit tube or away from any high-tension cable or power line. Otherwise the sensor cable may be exposed to induction, resulting in malfunction or damage.
- Use the shielded extension cable of over 0.3mm², if required. Connect the shield line to 0V line. Do not extend the cable longer than 100m.
- Be sure to have a bend radius of R36 or more.
- Do not use a hammer or the like in setting up the sensor. Its internal circuitry might be damaged.
- Combined use connection of a setting console and a erea scanner controller cannot be performed.

Power supply

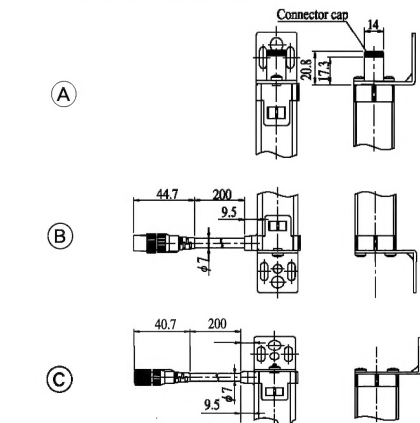
- Ground the FG(frame ground)terminal and the G (ground) terminal when a commercially available switching regulator is used. If not grounded, switching noises may cause malfunction.

NOMENCLATURE

- 形F3ZN-S□□□□P09-□-□□
- ① Protective height(mm)
 - ② P : PNP output type
 - ③ Beam gap(mm)
 - ④ Blank:Set of emitter and receiver
L:Emitter, D:Receiver
 - ⑤ Connection method

	Connection with main system	Series connection	Below No.
Blank	Connector	—	—
01	Connector	Connector	A
02	Cable with connector	—	B
03	Cable with connector	Connector	A,B
04	Cable with connector	Cable with connector	B,C
05	Connector	Cable with connector	C

(The different outside and size with F3ZN-SxxxxP09)



This device can not be used as a safety device to prevent personal injury by placing hands or other parts of body in hazardous area, an intrusion prevention device.

- Do not use as a safety device to prevent personal injury by placing hands or other parts of body in a hazardous area.
- Do not use on a machine or any devices as a safety interlock.
- Do not use on a machine or any devices as a safety mechanism or as an emergency stop for machines or devices when hands or other body parts enter a hazardous area.
- Do not use on an intrusion prevention device to open and shut a door or a window to hazardous area by detecting person's hand or other parts of body.
- This is a class A product. In residential areas it may cause radio interference, in which case the Responsible Person may be required to take adequate measures to reduce interference.

RATINGS

Ratings in only F3ZN-S	
Model	F3ZN-SxxxxP09-xx (refer to nomenclature)
No. of beams	21 to 125 (every two axes)
Sensing width	180 to 1116mm (Sensing widths = 9 × Number of beams-1)
Beam gap	9mm
Detection capability	Opaque material 14mm dia.
Operating range	0.2 to 7m
Current consumption	Emitter : 170mA max. Receiver : 120mA max. (under no-load conditions)
Light source	Infrared LED (870nm wavelength)
Response time	Sensing width
	Output1
Power supply voltage	Output2
	Output1
Output	Output2
External diagnosis input	Output1
Indicator	Output2
	Power indicator
Protection circuit	Function indicator
Ambient temperature	Reversed polarity protection, Output short circuit
Ambient humidity	During operation : -10 to +55 deg Centigrade (with no freezing) During storage: -30 to +70 deg Centigrade
Ambient light intensity	During operation: 30 to 95%RH (with no condensation) During storage: 30 to 95%RH
Degree of protection	Incandescent lamps : 3,000lux max.(receiver surface light intensity)
Weight	Sunlight : 10,000lux max.(receiver surface light intensity)
Accessories	IP65 (IEC60529)
	Weight(g)=(Protective height + 100) × 2 + 1700) max.
	Instruction manual, Mounting brackets(top and bottom), Mounting brackets(intermediate)*1, Error mode label

*1 : Type which have the total length of the sensor over 612 mm : 1 set for each of emitter and receiver

WIRING PROCEDURE

- Connect the emitter extension cable (F39-JCxA/B-L, gray color outer jacket, order separately) to the emitter.
- Connect the receiver extension cable (F39-JCxB/D, black color outer jacket, order separately) to the emitter.

Connector

Front View	Pin No.	Signal Name		Wire Color of Extension Cable
		Receiver	Emitter	
	1	-	-	White *1
	2	24VDC	24VDC	Brown
	3	Output1	External diagnosis input	Green
	4	Output2	N.C.	Yellow
	5	RS-485(A)	RS-485(A)	Grey
	6	RS-485(B)	RS-485(B)	Pink
	7	0V	0V	Blue
	8	N.C.	N.C.	Red

*1 : Be sure to use it in Open mode.

ACCESSORY

Single-ended connector cable(F39-JCxA)

order separtary

Type(set name)	for Emitter	for Receiver	L(mm)
F39-JC3A	F39-JC3A-L	F39-JC3A-D	3,000
F39-JC7A	F39-JC7A-L	F39-JC7A-D	7,000
F39-JC10A	F39-JC10A-L	F39-JC10A-D	10,000
F39-JC15A	F39-JC15A-L	F39-JC15A-D	15,000

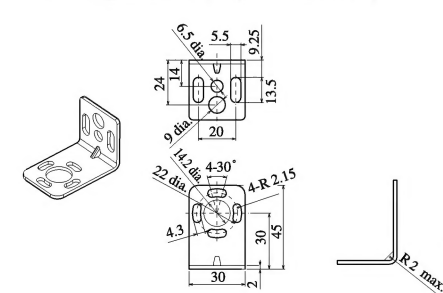
Double-ended connector cable for Series Connection, Extension and F3ZP Connection(F39-JCxB)

order separtary

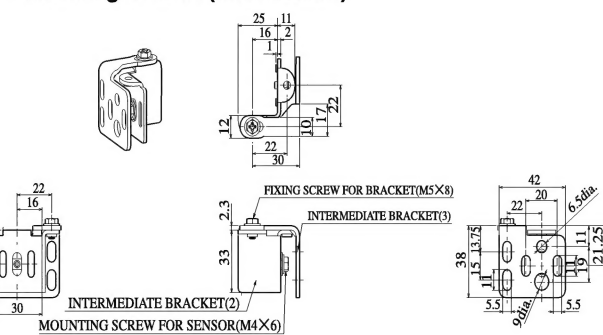
Type(set name)	for Emitter	for Receiver	L(mm)
F39-JC2B	F39-JC2B-L	F39-JC2B-D	200
F39-JC3B	F39-JC3B-L	F39-JC3B-D	3,000
F39-JC7B *1	F39-JC7B-L	F39-JC7B-D	7,000
F39-JC10B *1	F39-JC10B-L	F39-JC10B-D	10,000
F39-JC15B *1	F39-JC15B-L	F39-JC15B-D	15,000

*1 : [Note] Do not use for series connection.

Mounting Bracket (Top and Bottom)

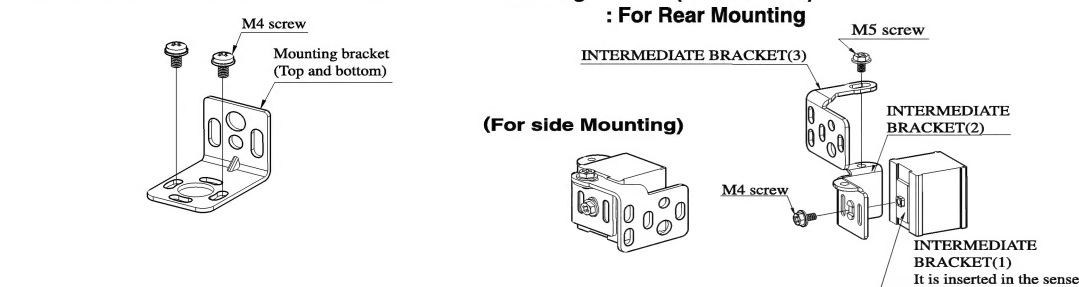


Mounting Bracket (Intermediate)



MOUTING BRACKET INSTALLATION

Mounting Bracket (Top and Bottom)



Mounting Bracket (Intermediate) : For Rear Mounting

(For side Mounting)

